G. G. WOLFE.

Magazine Stove.

No. 49,333. Patented Aug. 8, 1865.

Fig. 1

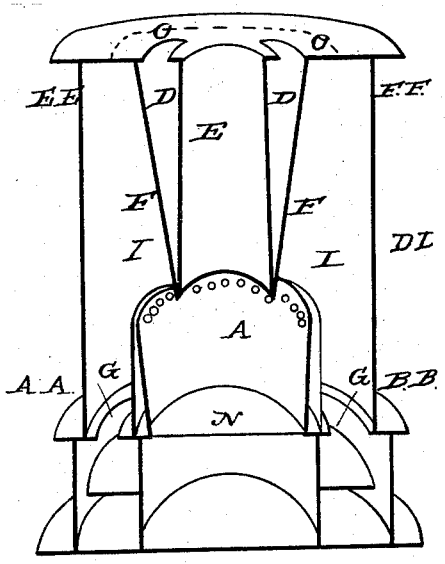


Fig. 2

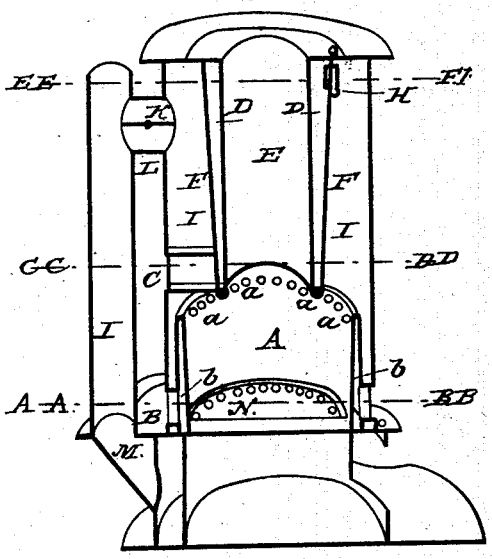


Fig. 3

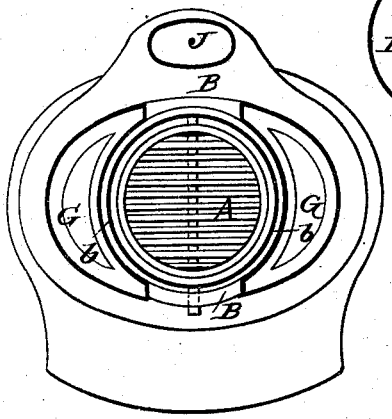


Fig. 5

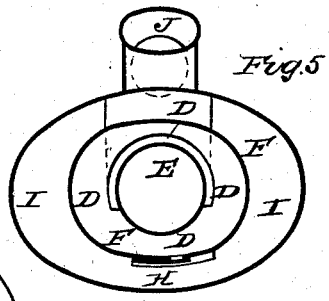
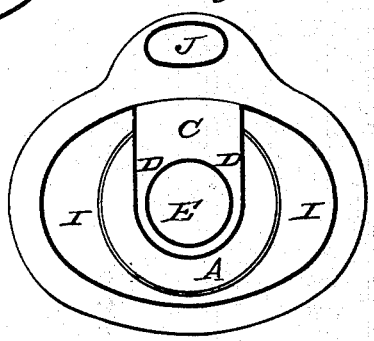


Fig. 6.



Witnesses

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GURDON G. WOLFE, OF TROY, NEW YORK.

COAL-STOVE.

Specification forming part of Letters Patent No. **49,333**, dated August 8, 1865.

To all whom it may concern:

Be it known that I, GURDON G. WOLFE, of the city of Troy, county of Rensselaer, and State of New York, have invented a new and useful Improvement in Base-Burning Coal-Stoves; and I hereby declare that the following is a full, clear, and exact description of the same, reference being hereby had to the accompanying drawings, which make a part of this specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 is a vertical section of my improved base-burning coal-stove from side to side at right angles with the exit-pipe, and showing the coal-supply reservoir or chamber surrounded with an air-chamber, and also showing the fire pot or chamber containing an annular chamber, and immediately below the said supply-reservoir and its chamber the outer or radiating chamber, the fire-grate, the ash-pit, and the flue or flues in the base of the said stove, and each more fully hereinafter described and set forth. Fig. 2 is a vertical section of the said stoves containing the said improvements and on a line from front to rear through the exit-pipe. Fig. 3 is a horizontal section on the dotted line A A and B B of Figs. 1 and 2. Fig. 4 is a horizontal section on the dotted line C C and D D of Figs. 1 and 2. Fig. 5 is a horizontal section on the dotted line E E and F F of Figs. 1 and 2.

The nature of my said invention and improvements consists in the employment of a self-seeding or coal-supply reservoir or chamber, which shall be surrounded by an air-heating chamber of any convenient shape or capacity, and into which cold air shall enter from the room where the said stove may be used through a supply-tube constructed for that purpose at or near the bottom of said annular air-heating chamber, by means of which the air enters said chambers and there becomes heated through, and by means of an outer casing, which casing in part forms said annular chamber, and rising therein it escapes into the room to be warmed or heated through openings at the top of such air-heating chamber constructed for that purpose; or it may be made to enter the radiating chamber through and by means of a valve or damper at or near the top of the said chamber, and thence be thrown down and upon the fire or ignited coal to aid combustion, in the manner substantially as herein described and set forth.

It also consists in the employment of a fire-pot constructed with an annular air-chamber, formed between an inner and outer plate or casing, into which air is admitted through an opening in front and in rear of the stove, in the manner substantially as herein described and set forth.

To enable others skilled in the art to which my invention relates to make and use the same, I will here proceed to describe the construction and operation thereof, which is as follow, to-wit:

I construct the base and outer cylinder of my improved stove in any convenient and substantial manner. The fire-pot A is made either of cast-iron or fire-brick, as may be deemed best; but I generally prefer cast-iron lined with fire-brick up to within a short distance of the perforations through which atmospheric air is admitted to the fire in the fire-pot, as shown at *a*, Figs. 1 and 2.

There is an air-chamber entirely surrounding the fire-pot, as shown at *b*, Figs. 1 and 2. This annular chamber may be of any capacity desired, and there may be as many openings or perforations communicating with the fire-chamber as may be deemed best, through which atmospheric air passes into the said fire-chamber to aid combustion in the consumption of the gases and smoke, or as much thereof as may by such means be burned or consumed. Cold air is admitted into said air-chamber through the openings or dampers B and B in the front and rear of the stove, and passes up through said air-chamber and through the said perforations, thereby burning the gases, smoke, and other combustible material arising from the surface of the fuel in the fire-pot, as aforesaid, and also preventing in a great measure the too rapid burning out of the inner part of said fire-pot if constructed of cast-iron only, and if of fire-brick the same result is reached relative to such brick. The said self-feeding reservoir or chamber I construct of cast-iron or other suitable material, and of any size or strength deemed best, and may extend down to near the top of the said fire-pot, if deemed best so to do. C, Fig. 2, is opening or damper in the back part of the stove, through which

air is admitted into the annular chamber D, Figs. 1 and 2, surrounding the entire height of the said self-feeding or coal-supply chamber E. The air, passing into said chamber through the said damper or opening, becomes highly heated by means of the outer casing, F, Figs. 1 and 2, and then passes through the opening or openings *o*, Fig. 1, in the top of the stove, constructed for that purpose into the room, thereby greatly aiding in warming or heating the room; or the said openings *o* may be closed by any suitable means, and the damper H, Figs. 2 and 5, at or near the top of said annular chamber D, may then be opened, so that such air so heated shall be thrown into the radiating-chamber I, Figs. 1, 2, and 4, and thence down the same into or upon the fire or burning material in the said fire pot or chamber A, and thereby aid combustion. The heat arising from the fuel in the combustion-chamber or fire-pot passes up and surrounds the said air-heating chamber D surrounding the said coal-supply-reservoir chamber, and thence into the flues in the base of the stove through the openings G G, Figs. 1 and 3, and thence in the line of the draft at the bottom of the vertical exit-pipe J, Fig. 2. When the damper K in the back connecting-pipe, L, is closed the draft is turned downward and passes down the outer side of the fire-pot or combustion-chamber into the chamber in the base of the stove, and thence into the back pipe through the opening M, Fig. 2, as aforesaid.

To use my said improved stove, a fire is built in it in the usual manner on the grate N, Figs. 2 and 3. The coal is then put in the said feeding chamber or reservoir E through an opening in the top thereof, which is then closed. The draft is admitted to the combustion-chamber and to the fire therein through the grate N, in the usual manner, by means of a sliding damper, which is in the door that closes or opens into the ash pan or chamber, which is situated below the fire-grate, and which receives the ashes from the fire-grate when the stove is in operation. By opening the pipe-damper K the direct draft is had, which, when closed, sets into operation the circuitous draft, as aforesaid described. All dampers must be closed in order to stop all draft when desired. By the means hereinbefore described I am enabled to construct a stove containing a great amount of heating and radiating surface, which is very desirable in parlor and like stoves; and by the aid of my said self-feeding chamber or coal-supply reservoir will be obviated the necessity of too frequent filling the stove with coal. The said feeding chamber being once filled with coal will last from thirty to sixty hours, feeding the fire in the combustion-chamber as fast as it is required by the burning or consumption of the coal within the same.

It will be seen that I admit atmospheric air into the said chamber surrounding the said coal-supply reservoir at or near the bottom of the said chamber, and, by means of and through a tube passing therefrom through the radiating-chamber and through the outer cylinder or casing which surrounds and forms the space between it and the casing which forms the said air-heating chamber around the said coal feeding or supply reservoir, into the room where such stove is used. Such air, entering the said heating-chamber in the manner aforesaid, arises in and entirely fills the said heating-chamber with fresh air, and, heating the same to a desirable temperature, it is thrown into the room to be warmed, while at the same time it contributes largely to preserve the immediate lower end of such coal-supply chamber or reservoir, and also protects and preserves the said casing by which the said air-heating chamber is formed, as aforesaid, from undue wear or destruction by or from the heat in and arising from the fire-pot or chamber of combustion below, as aforesaid.

By placing a tin or sheet-iron tube upon the top of my said stove of a size sufficient to cover the said openings in the top of the said air heating-chamber, and continuing the same to the room in the next story above that where the said stove is used, such room or story may be thus warmed.

Having thus described the construction and operation of my said invention, what I claim, and desire to secure by Letters Patent of the United States of America, is—

1. The employment of the said self-feeding reservoir or chamber, E, surrounded by the air-heating chamber D, with cold-air-supply tube C, arranged and combined with a base-burning coal-stove, in the manner substantially as and for the purpose herein described and set forth.

2. The employment of a fire-pot or combustion-chamber constructed with an annular hot-air chamber, with openings B B, arranged in the manner substantially as herein described and set forth.

3. The combination of the damper H with the openings or dampers *o o* in the coal-supply reservoir or chamber and said air-heating annular chamber D, in the manner substantially as and for the purpose herein described and set forth.

In testimony whereof I have, on this 1st day of May, A. D. 1865, hereunto set my hand.

GURDON G. WOLFE.

Witnesses:
CHARLES D. KELLUM,
MARCUS P. NORTON.